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See <http://www.worldtimeserver.com> for information on different time zones
and the time in Melbourne Australia compare to your local time.

Warranty Information

Swann Communications warrants this product against defects in workmanship and material for a period of one (1) year from its original purchase date. You must present your receipt as proof of date of purchase for warranty validation. Any unit which proves defective during the stated period will be repaired without charge for parts or labour or replaced at the sole discretion of Swann. The repair or replacement will be warranted for either ninety days or the remainder of the original one year warranty period, whichever is longer. The end user is responsible for all freight charges incurred to send the product to Swann's repair centres. The end user is responsible for all shipping costs incurred when shipping from and to any country other than the country of origin. The warranty does not cover any incidental, accidental or consequential damages arising from the use of or the inability to use this product. Any costs associated with the fitting or removal of this product by a tradesman or other person or any other costs associated with its use are the responsibility of the end user. This warranty applies to the original purchaser of the product only and is not transferrable to any third party.

Unauthorised end user or third party modifications to any component or evidence of misuse or abuse of the device will render all warranties void.



www.swannsecurity.com



English

Black Knight

Wireless Weatherproof

Color Camera

with Night Vision



Swann Helpdesk
Has the answers



**If this device does not work when you first plug it in,
do not take it back to the store.**



Contact the Swann Helpdesk using our fast e-mail service
tech@swann.com.au or call us on one of the Toll-Free
numbers shown on the back cover of this booklet.



Most problems can be quickly and easily fixed with a simple
e-mail or a quick chat with one of our friendly technical staff.
(Toll-Free available in the US and Australia only)

Note: Wireless Networks (WiFi) may interfere with and/or experience interference caused by the transmitter in this unit. Changing the receiver to another channel/frequency or setting the Wireless Network (i.e. Wireless Access Point) to a frequency further away from the camera's set frequency can alleviate this problem. Consult the documentation of your Wireless LAN device for information on how to change the transmission frequency. These cameras work with most wireless camera receivers that support 2414MHz, 2432MHz, 2450MHz and 2468MHz.

Installation Guide

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Introduction

The Swann Black Knight Camera allows you to transmit pictures and sound with ease. As the radio waves it uses have a frequency of 2.4GHz, they can be received within a radius of up to 330ft/100 m in open line of sight. The Black Knight Camera Receiver works with other Swann cameras to allow you to have the option of using different frequencies for different locations and conditions to ensure that you have the best possible image quality for your situation. We suggest the Night Hawk Extra Camera (SW-P-WOCX) which is a Wireless Weatherproof Outdoor Camera with Night Vision or the MicroCam IV (SW-P-MC4) Indoor Color Camera. Both of these camera models have DIP switches to allow them to use of any of the other available channels on your Black Knight receiver.

Please note: The Swann Black Knight Camera broadcasts video in the public domain. The video signal is not encrypted and could potentially be viewed by anyone with a similar 2.4GHz receiver unit. Please keep this in mind when positioning and using any wireless camera equipment.

Your Black Knight package comes with ...

- 1 x Black Knight Color Camera with built in 2.4GHz Transmitter and Stand
- 1 x Black Knight 4 channel 2.4GHz Receiver
- 2 x Antennas, one each to suit Camera and Receiver
- 2 x Mains Power Adaptors (1 for use with Black Knight Camera and 1 for Receiver)
- RCA AV Cable
- Pack of screws, wall plugs and tool for changing channel dip switches
- This Instruction Sheet

If any of these items are missing, please contact your retailer.

FCC NOTICE

This device complies with Part 15 of FCC Rules.

Operation is subject to the following conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation

Technical Specifications

Black Knight 2.4GHz Transmitter

Available Channels:	4 Channels in 2.4 GHz frequency band*
RF Output Power:	FCC, CE and C-tick compliant
Power Consumption:	120mA (270mA IR LEDs on)
Size:	2½" Dia x 3¼" L (61 x 96mm)
Antenna:	Omni-directional
Transmitting Range:	Up to 330ft ~ 100M line of sight
Weight:	12½oz ~ 350 grams
Operating Temperature:	0°C - 50°C (32°F - 122°F)

Black Knight 2.4GHz Receiver

Frequency:	4 Channels in 2.4 GHz frequency band*
Video input/output:	1V p-p / 75 ohm
Audio input / output:	0.8V / 600 ohm
Antenna:	60 degree directional
Audio Bandwidth:	50 - 17000 Hz
Power Consumption:	180mA
Size:	6"x3½"x1½" - 150 x 88 x 40mm

*The Black Knight Camera uses the following frequencies for the 4 channels: Channel **1** (2414MHz), Channel **2** (2432MHz), Channel **3** (2450MHz) and Channel **4** (2468MHz).

Black Knight CCD Colour Camera

Sensor:	1/4" (6.35mm) Colour CCD
Horizontal Resolution:	420 TV lines
Pixel Resolution:	512 x 492 (NTSC) ~ 512 x 582 (PAL)
Auto Electronic Exposure:	1/60 - 1/15000 sec.
Minimum Illumination:	1 Lux @ f2.0 LEDs inactive 0 Lux @ f1.2 LEDs active
Signal to Noise Ratio:	>38dB
View Angle:	39 degrees
Video System:	PAL 50Hz (Australia, UK/Europe), NTSC 60Hz (USA and Canada)

Automatic Exposure / Gain / White balance/IR LED activation

Troubleshooting, hints and tips

Poor Picture: Realign antennas until image quality improves, slightly adjust the position of the Night Hawk Camera or Receiver. Change the location of the Camera, or use a different Camera in the location experiencing interference that is on a different channel. In some cases interference may be caused by another device on a similar frequency to the channel you are using. Change to one of the other channels and check the signal quality again.

Lines only - no clear picture: Check to confirm there is no microwave oven or other 2.4GHz equipment operating close by ie; Cordless Telephones, Wireless Baby Monitors, Wireless LAN equipment etc. Make sure the Receiver is on the correct channel for the particular camera.

Picture ghosting or interference: Some home appliances such as Wireless LANs, 2.4GHz portable telephones and Microwave ovens operate on or near the 2.4GHz frequency. If you receive interference from such an appliance, try moving the Camera or Receiver to location further away from the appliance or in the event of interference from a Wireless LAN device, try changing the Wireless LAN to a different channel to improve the signal quality.

No picture: check the receiver to confirm it is turned ON and make sure the A/V connection of the Receiver is not plugged into the Audio Out socket. Make sure the Receiver is on the correct channel. Check that the channel on the receiver is the set to the same as the camera you wish to view. Check to ensure the camera is plugged in and has power (cup your hands around the camera and you should see a faint red glow from the IR LEDs). You can use the infrared lighting facility to pick up a picture inside a dark environment. If your monitor does not display a picture in a dark environment, check the camera to be certain that infrared lighting is within range of the subject. Try to move the item within the 2-3m (6-9ft) range of the Cameras IR LEDs or place the Camera nearer to the object until a clear picture is displayed on the Monitor.

FCC Notice

We, Swann Communications of 10612 Shoemaker Avenue, Bldg A, Santa Fe Springs, CA 90670 USA, declare under our sole responsibility that the product:

SW-C-BLACKK

This product meets the requirements specified in Part 15 of FCC Regulation. Operation rests with the following two conditions:

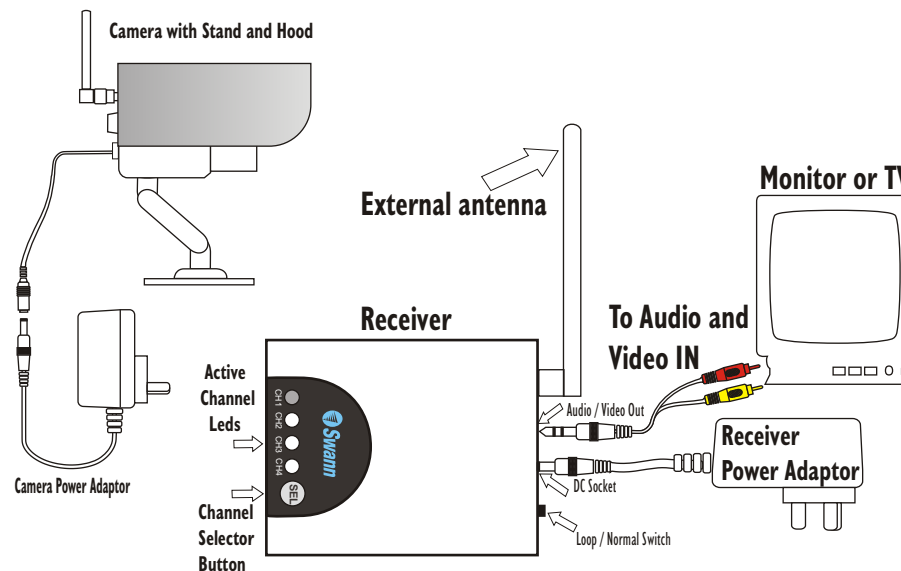
- (1) The equipment should not cause any harmful interference;
- (2) The equipment must receive and process any interference, including any possible interference caused by operation mistakes. After testing the product, we confirm that it complies with the provision for class C digital equipment in the 15th part in FCC regulation; and the receiver complies with the limitations for class B digital equipment in Part 15 of FCC regulation. The product generates, applies and emits radio waves. It might cause harmful interferences to wireless communication if not be installed and used following the description of the manual. The product may cause interference in residential area, and the customer should take remedies to eliminate the interference at their own costs. If the product causes any harmful interference to wireless equipment or disturbs the receiving of TV signals (it can be identified by turning on and off the product), you can solve the trouble by following methods:

- (1) Re-adjust the product or put it in another place;
- (2) Extend the distance between the equipment interfered and the product; and
- (3) Refer to dealers or experienced radio electrician for help.


CE Notice

This product complies with standards including Low Voltage Device Directive 73/23/EEC; EMC Directive 89/336/EEC and R&TTE Directive 1999/5/EC. It passed the subject tests by the authority concerned and is authorized to bear CE mark.

Setting up your system



The Camera features an omni-directional antenna which is most effective when used in the UPRIGHT position.

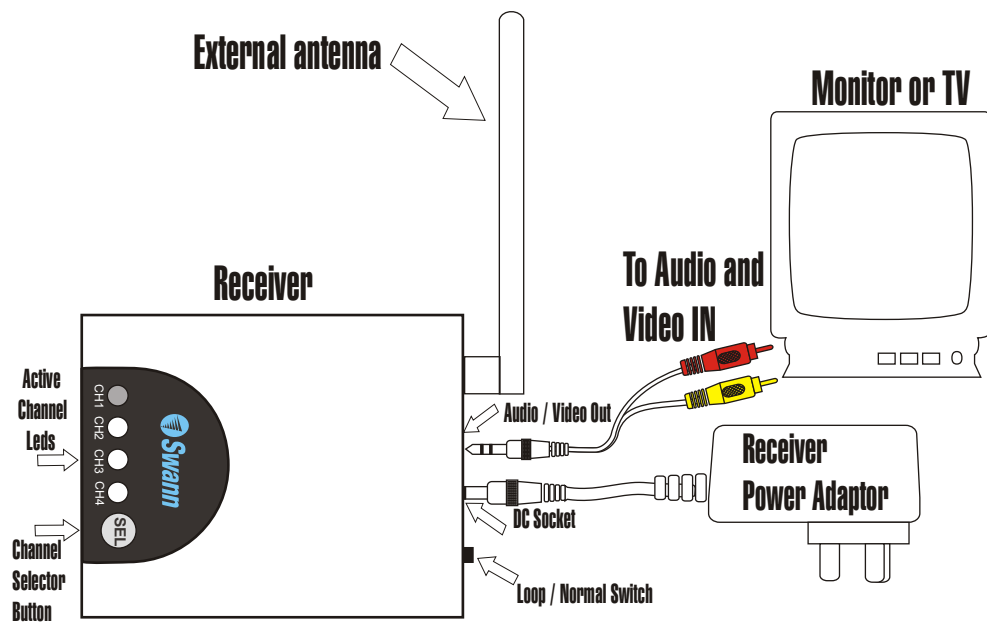
- 1) Connect both the Camera and the Receiver to their respective power adaptors (the Adaptors have a label on the end of the cable to indicate which unit they must be used with).
- 2) Connect the Receiver to the equipment you wish to view the camera on (monitor, AV TV, VCR, DVR etc) using the supplied A/V-RCA cable. If you have an **AV TV** with RCA sockets you will need to switch the **TV** to the **AV** channel to view the camera. To connect the Receiver to your **VCR**, you will need to turn the **VCR** to the **AV Input** selection and turn your **TV** onto the channel you would normally use to view a tape or movie on your **VCR**. The AV channel may be activated by a button on your remote that is marked with this symbol , or **L1** or **L2** or possibly **AV**, **AV1** or **AV2**. Check the manual of your TV or VCR for more information on using its AV inputs.
- 3) After connecting both the Black Knight Camera and the Receiver make sure the receiver is switched to the same channel as the camera. By default the camera is set to **channel 1**. Press the **SEL** button on the receiver until the LED for **CH1** is lit. If the channel LEDs flash and the receiver scans through all 4 channels, switch the Loop/Normal selector at the back of the receiver to **Normal**. Obtain the best picture by adjusting the position of the Black Knight camera and Receiver unit to suit. Try slightly different locations of either unit for optimum results.
- 4) If you are mounting the camera to a ceiling or eave, unscrew the camera stand from the camera body and carefully screw it into position on the back of the camera using the hole that is provided or the picture will appear on your screen upside down.

Camera features

1. Omni-directional Antenna
2. Infra-red LEDs
3. Detachable Camera Stand
4. Microphone (enclosed in power socket)
5. Power Cable & DC Power Socket

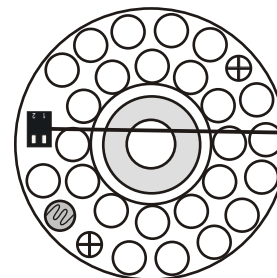


Receiver features



Changing the channel on the Black Knight Camera

The Black Knight Cameras can be switched to any of four frequencies to assist in avoiding interference. Please see the illustration below for frequency settings. Unscrew the front of the camera case to gain access to the channel switch. To change the frequency/channel on the receiver, press the SEL button on top of the receiver to cycle through the channels. You can also switch the Loop/Normal switch to Loop, which will allow the receiver to switch through all four channels automatically. The LEDs indicate which channel is currently selected.



Front view of camera with Switch Block (note the numbers 1 & 2 indicate the left side of the switch).

By changing these switch settings, the frequency that the Camera transmits on changes. Once you have set the channel on the Camera, select the same channel on the receiver. If you experience interference try a different channel.

Do not set two Cameras to the same channel or they will interfere with each others signal.

Channel & Frequency settings

Channel 1	Both switches Right	2414MHz
Channel 2	Top Left & Bottom Right	2432MHz
Channel 3 (default)	Top Right & Bottom Left	2450MHz
Channel 4	Both switches Left	2468MHz

Important Information about this product

- Please test all devices before final installation because transmission quality can often be improved by moving the components slightly.
- Beware of humid locations. Water droplets or spray may damage the receiver unit. If condensation does occur, do not use the equipment until it has dried out.
- Do not cut the DC power cable of the Black Knight Camera to fit with another power source. This may result in damage to the Black Knight Camera & any unauthorised modifications will void your warranty.
- The microphone for the Black Knight camera is in the power socket, and is not waterproof. The power socket must be protected from water to ensure correct operation.
- Interference from certain electronic equipment or the moving human body can also affect the range obtainable.
- Best Results are achieved where there is a clear "line of sight" or minimal number of solid objects between the Camera/Transmitter and Receiver. See diagram below.

